he Crabster CR200 is about 7 feet long and weighs nearly 1,400 pounds.

Korea Research Institute of Ships and Ocean Engineering

A Giant Robot Crab

Scientists in South Korea invent the Crabster CR200 to aid in deep-sea exploration

BY HAILEE ROMAIN

What mysteries lie at the bottom of the sea? A 1,400-pound crab-like robot may be able to provide the answer. Designed to withstand strong ocean currents, the Crabster CR200 mimics the movement of small crustaceans that live in **turbulent**, or violently moving, waters and crawl along the seafloor. Developed by the Korean Institute of Ocean Science and Technology (KIOST), the robot was built for the most dangerous deep-sea exploration missions.

DESIGNED FOR THE OCEAN

The CR200 is more than 4 feet tall and is 7 feet wide by 7 feet long. Its six legs contain 30 motors, and a pilot operates the robot **remotely** (from a distance). The Crabster also has **sonar** capabilities. This means it can use sound waves to scan the underwater landscape while creeping along the ocean floor. It has 11 onboard cameras, including one specifically designed to see through murky waters.

Huge areas of the world's oceans remain unexplored. Fast currents can be dangerous for human divers, who are limited to calm, shallow seas. Propeller craft do not work well in fierce currents either and often kick up **sediment** (stones and sand at the bottom of water) from the ocean floor that makes it hard to see. Unlike other exploration methods, the Crabster CR200 is designed to be stable in both strong currents and rough terrain.

Bong-Huan Jun, the lead researcher on the project, says that there are many potential uses for the bot. "CR200 can conduct seabed mapping, [and do a] survey and inspection of wrecks, pipelines, ecosystems, and pollution," he says. "It also could assist in locating underwater resources—carrying out underwater mining— and respond to oil-spill incidents."

IMPROVING THE CRABSTER

Researchers are currently testing the robot at its maximum depth of 656 feet. Though the CR200 is reportedly performing well, there is always room for improvement. Right now, the team's biggest concern is the robot's slow pace—it crawls along the ocean floor at only 4 inches per second.

"We are performing tests nearly every day," Jun says. "We [are upgrading] Crabster software for more-stable and fast walking and manipulation."

Researchers are also focused on improving the CR200's underwater vision system to get the best-possible images of the ocean floor.

The Crabster CR200 is currently in the final stage of testing. In May, it will be sent to the Yellow Sea off the west coast of South Korea to help archaeologists excavate 12th-century shipwrecks and hunt for artifacts.